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The Effect of Coronavirus on the Giant Screen Business

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), the virus that causes the coronavirus disease 2019 (COVID-19), referred to henceforth simply as “coronavirus,” has temporarily closed at least 90% of all giant-screen and IMAX theaters worldwide since the outbreak was declared a pandemic in mid-March. This article will document the effects of the outbreak and the responses to it by the giant-screen world.

The disease was first identified in Wuhan, China, on Dec. 31, 2019. On Jan. 22, 2020, when the death toll stood at 26, major studios decided to delay the openings of seven major blockbuster films in China that had originally been scheduled for the Chinese New Year holiday, Jan. 25 to Feb. 4. **Imax Corporation** issued a statement on Jan. 23 supporting the decision. In the next few days, museums and other tourist attractions throughout China began closing, along with some 70,000 multiplex theaters, including more than 700 IMAX screens.

By early March, the virus was present on

every continent except Antarctica, and dozens of museums with giant-screen theaters in Taiwan, South Korea, Japan, and Kuwait had closed, including the **National Science and Technology Museum** in Taipei, the **National Science Museum** in Daejeon, **Science Museum, Osaka**, and the **Scientific Center of Kuwait**. Throughout the first two weeks of March, multiplex IMAX theaters in Italy, Slovakia, Japan, Denmark, Poland, Greece, and Norway closed.

According to an extensive survey *LF Examiner* has made of the Web sites of virtually all GS theaters in the world, the first U.S. museum with a GS theater to close was the **Museum of Science Boston**, which shut down on March 12. The **Eugenides Planetarium** in Athens, Greece, closed the same day, followed on Friday, March 13 by more than a dozen other institutions in the U.S., Canada, Greece, Denmark, and the Netherlands. The **Smithsonian Institution** closed the National Zoo and 15 museums (including two with IMAX theaters) in the Washington, DC, area on March 14. In the following week, at least 100 more institutions with GS theaters closed. **AMC Theatres**, **Regal Entertainment**, and **Cinemark**, the three largest theater chains in North America, closed their combined 1,524 locations, including more than 425 IMAX screens, on March 17. Nearly all smaller exhibitors in North America followed suit over the next week.

On March 18, as new cases in China seemed to be approaching zero, Imax CEO **Richard Gelfond** told *The Hollywood Reporter*, “I’m hoping – and a lot of this is subject to biology – that by June things will be somewhat more normal over there.” The following day, **Macquarie Re-**

search said that Imax’s “pristine balance sheet,” lack of debt, and \$100 million in cash meant that the company could hold out for “at least two years.” The report led to a 60% jump in the price of Imax stock, from \$7.20 on March 18 to \$11.47 the next day. (A month earlier the shares had been trading at \$17.10, with a 52-week high of \$25.36.) As this issue went to press on April 22, Imax shares were trading at \$11.06.

On March 23, the Chinese government allowed about 500 (non-IMAX) theaters – less than 5% of the country’s total – to reopen, but they sold a combined total of only \$2,000 of tickets on the first day. Less than a week later, they were all ordered closed again.

A few days later, AMC sent a letter to its landlords in North America saying that it would stop paying rent as of April 1, and reportedly began preparing to file for Chapter 11 restructuring of its \$4.9 billion in debt.

Status of institutional theaters

By early April, of the 212 non-multiplex GS theaters in *LF Examiner*’s database, 193 (91%) were confirmed closed. The **Toyohashi Museum of Natural History** in Japan was one of the last to close, shutting its doors on April 14. At press time only two appeared to still be open, according to their Web sites: the **National Planetarium** in Kuala Lumpur, Malaysia and **National Museum of Marine Science & Technology** in Keelung, Taiwan. Both were using enhanced sanitizing and social distancing procedures. (We were unable to determine the status of 17 others, mostly in China, and either have no Web sites, or give no sign of their status on the site.)

(see COVID on page 4)

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GSCA's Film Expo, March 9–10 in L.A.

The **Giant Screen Cinema Association** held a two-day Film Expo in Los Angeles, March 9–10, featuring screenings of 12 new films and presentations on 17 films in production and nine films in development. In addition, conferees were bussed to a private theater in Hollywood to view clips of **Ang Lee**'s 2019 feature *Gemini Man*, projected, as it was shot, in 4K 3D at 120 fps, and hear from two of the technical experts who worked on the project.

The Film Expo happened just one day before the World Health Organization officially declared the coronavirus outbreak a pandemic, and a week before the Centers for Disease Control advised against meetings of more than 50 people. Although about 10% of the 176 registered participants chose not to attend, most people at the meeting (including this writer) did not seem overly concerned or worried. Fist bumps and elbow bumps were the usual greeting, but people were not yet in the habit of avoiding ordinary handshakes entirely. A few participants reported that their institutions had already closed,

or were planning to shortly, but it wasn't until the weekend after the Expo that most closures began. (*See article on page 1.*)

New Films

Of the 12 new films presented, only one was screened for the first time in March: *Dinosaurs of Antarctica* from **Giant Screen Films**. The film follows scientists as they search for fossils that show that Antarctica was once the tropical home to "bizarre dinosaurs and colossal amphibians."

The remaining 11 titles had been presented as New Films between two and five times each. (The GSCA's rules for conference screenings allow completed films to be shown in the New Films category at two successive meetings, not counting pre-release rough or fine cuts, and alternate versions, such as 20-minute cuts, also get two screenings.) New films and their production companies:

Ancient Caves Oceanic Research Group
Apollo 11: First Steps Edition Statement Pictures

Letter to the Editor

"If you can't beat 'em, join 'em."

We are exploring the 20-minute giant-screen format. We are producing a film about underwater astronaut training at NASA (working title: *Astronaut! Ocean to Orbit*) which is being written and produced specifically for the 20-minute run time. There will be no 40 minute version. It was shot entirely dome-friendly from the start and will definitely be available in dome and 2D flat versions. We are not sure about 3D yet.

Release date is expected to be fall 2020. Filming is complete.

I spoke with a number of theater directors at the **Giant Screen Cinema Association** conference about the 20-minute format and a number of them are starting to consider the idea, because there are times when the arguments are hard to deny:

- When the museum is really busy and you don't have enough seats to go around, flipping the theater on the half hour means doubling the capacity of the theater. And this is particularly relevant now. For at least a while post-coronavirus, social distancing rules will require that theaters operate at reduced capacity. Shorter films will allow twice as many tickets to be sold while meeting these requirements.

- At times such as school-day afternoons, when museum visitors are mostly families with younger children who aren't in school, shorter films may be

more compelling to parents who don't think a restless four-year-old will sit through a 40-minute science film.

One of the things that bothers me about a 20-minute version of a 40-minute film is that it's just not the same film. You simply cannot tell the same story in half the run time. You have to decide what stays and what goes, and literally *half* the film has to go! So why not *start* with the idea of a 20-minute film? Tell a story that works in 20 minutes. That's what we are doing with *Astronaut*. Since there will be no 40-minute version, I expect the market for the film to be somewhat limited, but we're giving it a shot. In our case, this is a topic that works really well in 20 minutes.

Jonathan Bird is president of Oceanic Research Group and an Emmy-winning cinematographer and producer. He directed and produced *Ancient Caves* and is currently working on *Secrets of the Sea*. He can be reached at *jbird@oceanicresearch.org*.

Correction

The caption of the photograph on page 4 of the March 2020 issue incorrectly described Dion Beebe. He is a cinematographer, not a stereographer.

Asteroid Hunters.....Imax Corporation
Back From the Brink.....Sean Casey Productions
Conquest of the Skies.....Colossus Productions
Dino Dana: The Movie...Sinking Ship Entertainment
Dinosaurs of Antarctica.....Giant Screen Films
Into America's Wild.....MacGillivray Freeman Films
Mountain Adventure.....Wild Pacific Media
Sea Lions: Life by a Whisker.....Definition Films
Secrets of the Universe.....Stephen Low Company
Son of Bigfoot 3D, The.....nWave Pictures

Films in Production

Of the 17 films in production, six were presented for the first time at a GS conference. *America's Arctic*, produced by **Terra Mater Factual Studios**, explores the Arctic National Wildlife Refuge in northeastern Alaska, as seen by nature photographer **Florian Schulz**, who has spent most of the last five years living in and photographing the 20 million-acre (78,000-square kilometer) area. Apart from the Films in Production session, Schulz also gave a special presentation on his project, with compelling slides and behind-the-scenes video.

Artemis: Beginning of a New Era, from **Afterglow Studios**, looks at the next-generation spacecraft that will take humans to the Moon and Mars.

A Short History of Nearly Everything is based on the book of the same name by **Bill Bryson**, and is being produced by **David Gross** of **Definition Films**, with the participation of actress **Gal Gadot**. In a pre-recorded video, Gadot spoke to conferees about the project's focus on the "interconnected nature of every aspect of the natural and human worlds."

The remaining three Films in Production first-timers were Hollywood features: *Mulan* from **Disney**, **Paramount's Top Gun: Maverick**, and *Wonder Woman 1984*, starring Gadot, from **Warner Bros.**

The returning Films in Production and their producers were:

Antarctica: Into the Unknown.....BBC Studios
Cool Cities.....Wild Pacific Media
Ireland.....MacGillivray Freeman Films, Inc.
Mars 1001.....Mirage 3D
Ocean Currents.....Wild Pacific Media
Secrets of the Sea.....Oceanic Research Group
Serengeti.....K2 Studios
Shark Heroes.....Definition Films
Snow.....Saint Thomas Productions
Tenet.....Warner Bros.

Wings Over Water.....Dorsey Pictures

Films in Development

Six of the nine films in development were presented for the first time. **Boston Films** unveiled two projects: *Gravity* uses extreme sports to show "how humans interact with gravity, how it helps form and power our planet and solar system." And *Oceans Power*, which examines how the seas that cover three-quarters of the Earth's surface "regulate our climate and produce half the planet's oxygen and food."

Schurmann Filmes is also working on two titles: *Pantanal-The Wild Wetland of the Jaguar* explores that lush and exotic



Gal Gadot (seen here in 2016) will appear in Wonder Woman 1984, and spoke to the GSCA Film Expo on video about A Short History of Nearly Everything from Definition Films.

area of the Amazon rainforest, and *Voice of the Oceans* will "take the audience on an incredible, touching journey...to discover the ocean's beauty, great challenges, and hope."

Jet Force Nine, from **Speedbird Productions**, looks at the Canadian Air Force's Snowbirds precision aerobatic team, and is being produced by former commander of the team **Scratch Mitchell**.

Wonderburst's Unseen Football features quarterback Tom Brady and "explores the game as a phenomenon of science, revealing how every play is invisibly governed by the laws of physics as well as human anatomy and psychology."

The other films in development were:

How to Be an Orangutan.....December Media
Koala.....Amezdroz Media
Shark Rescue.....December Media

Innovation Session: HFR

At the end of the last day of the Film Expo, busses took conferees to a private theater in Hollywood for a session organized by the Innovation Committee (formerly the Technical Committee) entitled "Completing the Transition from Film to Digital with HFR and HDR."

The session's purpose was to further acquaint the GS community with new capabilities that technology makes possible as cinema becomes fully digital, end to end. Although high frame rate (HFR) was possible with film, it is vastly less expensive and cumbersome in the digital domain. As we have reported previously, the experience of HFR, especially when combined with 4K 3D images, is extraordinarily realistic and compelling. This makes it ideal for GS documentary filmmaking, where the goal is to make audiences feel they are in a completely different place.

Although the transition to HFR will take some time, and involve cooperation between equipment manufacturers, producers, distributors, and theaters, it could be the next step in setting the GS world apart from all other forms of entertainment. As such, it behooves theaters planning to replace their aging film projectors, or to upgrade their first-gen digital systems, to ensure that any new digital system they acquire is future-proof.

The Hollywood theater has been equipped by **Christie Digital** with its Cinity projection system, a dual-laser system capable of projecting 4K 3D material at 120 fps, five times the standard cinema frame rate of 24 fps. The system was developed in cooperation with China's **Huaxia Film Distribution**, specifically to project the films of Oscar-winning director Ang Lee, who has pioneered the format and shot his last two films with it.

However, because of Huaxia's involvement, the system has so far only been installed in multiplexes in China. The Hollywood theater is the only one in North America equipped with Cinity and it is used by Christie for testing and demonstrations.

The session was opened by **Larry Paul**, Christie's executive director for technology and custom solutions, who was instrumental in introducing Ang Lee to repre-

(see *GSCA* on page 13)



Alan Nursall, CEO of Telus World of Science Edmonton, demonstrating science from his kitchen.

(from **COVID** on page 1)

When first announcing their closures, about 80 theaters said they intended to reopen in a few weeks, some setting dates less than two weeks out. But by the time those dates arrived, all had pushed back their projections. Half of them set new dates between 14 and 90 days further out, but the rest simply said they would remain closed until further notice.

With the closures, many institutions began posting videos and other material to help their visitors and members educate and entertain children, pass the time during quarantine, and keep the museum in mind until things get back to normal.

(This last point was a top recommendation from data analyst **Colleen Dilenschneider**, who posted several reports on the effect the coronavirus may have on cultural institutions, and what they can do to remain relevant and useful to their visitors while closed. Her report on why marketing during the closure is important, and many other studies, can be found at colleendilen.com.)

The content being posted by museums is varied, and includes lesson plans, activity guides, and other previously prepared materials, but leans heavily to newly created videos. Several common themes have emerged: "Science at Home" videos, recorded in staffers' homes; science demos of the kind previously offered live in the museum; story times, with staffers reading

science-related picture books for young kids; talks about specific museum exhibits; and talks by or interviews with staff scientists or GS filmmakers about their work.

Alan Nursall, chair of the **Giant Screen Cinema Association** and CEO of **Telus World of Science Edmonton** in Alberta, Canada, has filmed several videos in his kitchen (as have other TWOSE staffers in their homes), to demonstrate simple principles of science that viewers can recreate using materials around the house.

As a typical example, Ohio's **Cincinnati Museum Center** has posted a live video feed of its aquarium; a Facebook live ses-

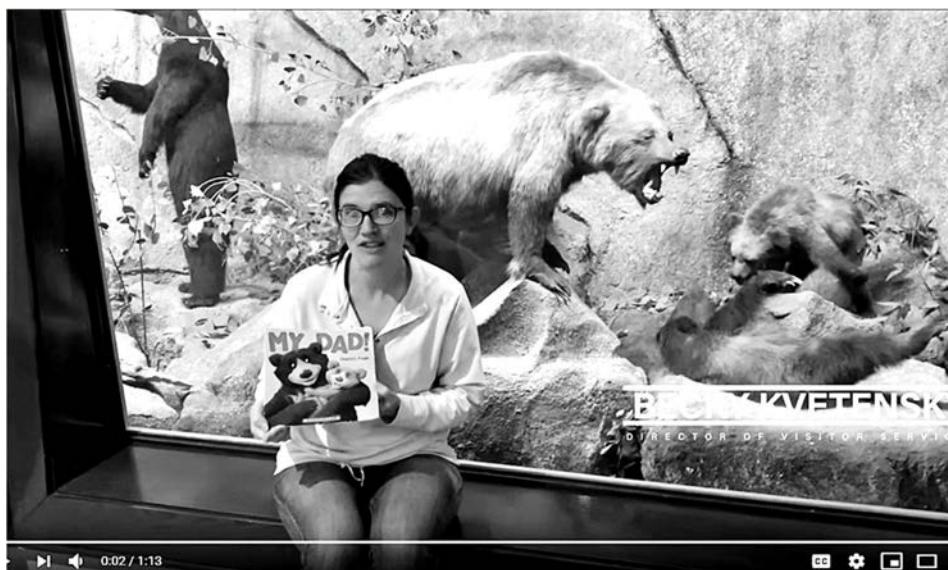
sion with a staff paleontologist describing her job and research; and a staffer reading a story book, *Ada Twist, Scientist*.

The **Hastings Museum** in Nebraska filmed a new series of videos in the empty building, called **Museum Minute**, with staffers offering behind-the-scenes looks at exhibits, and explaining scientific principles, such as how germs are spread. They also began a story time series, shot near relevant exhibits, for instance a story about a bear filmed next to a diorama with a bear.

IMAX Victoria, located inside Canada's **Royal B.C. Museum**, is posting new content in the form of remote video interviews with GS filmmakers. To date, the theater's **Lea Silver** has interviewed sound engineer and Victoria resident **Tim Archer** of **Masters Digital**, **Superpower Dogs** director **Daniel Ferguson**, and GS veteran **Greg MacGillivray**. The live feeds are only offered to holders of its annual pass, but the recorded videos are later posted on the theater's Web site.

The **Tennessee Aquarium** in Chattanooga has posted more than live 40 videos to its Facebook page, running from a few seconds to an hour, featuring shots of the animals and their handlers feeding them and answering questions from viewers.

Although many museums are posting a few new videos each week, some are going further and posting videos every day, or even more frequently. The **Great Lakes**



The Hastings Museum's Becky Kvetenski reads a story about bears in front of bears.

Science Center in Cleveland, OH, streams live videos from its building every day at 10:30 am, and (as of press time) has racked up more than 84 new videos since closing on March 13.

The **Arizona Science Center** in Phoenix has topped that, posting 88 live videos from the museum or staffers' homes.

Most museums are also e-mailing and posting new requests for donations on their sites.

LF Examiner has checked the Web sites of virtually all GS institutions in the western hemisphere for new "lockdown" content. We have posted those links on a new page at LFExaminer.com: tinyurl.com/LFXcovid. (Or use the QR code on page 15.) We have also updated the Web site's Theaters page to include their current status: closed, open, or unknown.

We welcome additions and updates, especially from organizations in the Asia-Pacific region. Use the Web site's contact page or e-mail editor@LFExaminer.com.

Producers' responses

So far, two producer/distributors have released full-length GS films for free streaming at home: **Giant Screen Films** and **MacGillivray Freeman Films**. The titles available are:

Giant Screen Films:

Dinosaurs Alive (2007)



Lea Silver of IMAX Victoria interviewed sound engineer Tim Archer about sound for GS films.

Mummies (2007)

Wild Ocean (2008)

MacGillivray Freeman Films:

The Living Sea (1995)

Dolphins (2000)

Coral Reef Adventure (2003)

Van Gogh (2009)

Humpback Whales (2015)

National Parks Adventure (2016)

Dream Big (2017)

America's Musical Journey (2018)

Cosmic Picture posted a "takeover" of its Facebook page by Henry, one of the

rescue dogs featured in *Superpower Dogs* and a discussion about its 2013 film, *Jerusalem*, with director Daniel Ferguson.

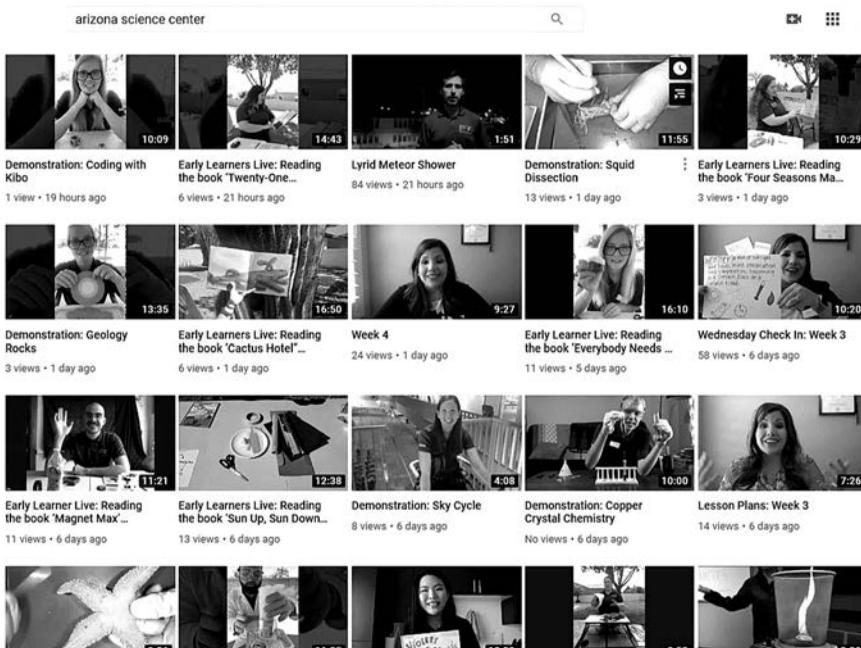
SK Films has created an "Explore at Home Kit" that is available for free at its Web site. The 38-page PDF file features educational materials prepared for its GS films, including *Flight of the Butterflies* (2012), *Amazon Adventure* (2017), *Backyard Wilderness* (2018), and *Volcanoes: Fires of Creation* (2018).

Fulldome system and content supplier **Evans & Sutherland** is helping dome clients by making flat-screen HD versions of four fulldome titles available for free streaming. (The videos include an anti-piracy text crawl.) E&S dome theater clients, like the **U.S. Space & Rocket Center** in Huntsville, AL, are creating and posting videos using imagery from their Digistar systems.

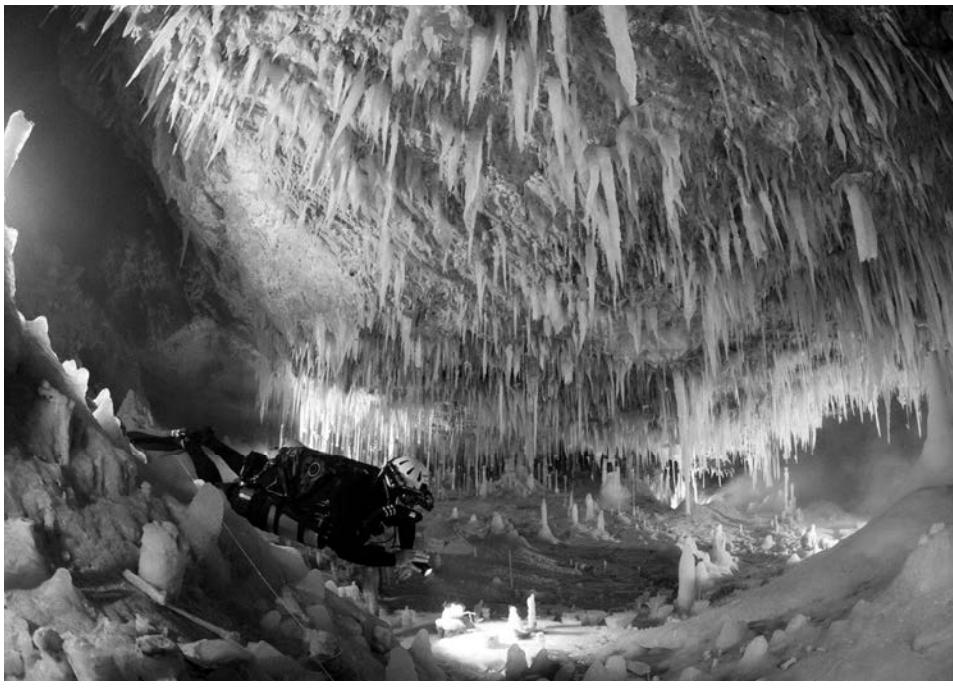
Other responses

By mid-March several movie and entertainment industry conferences had been canceled or postponed: **CinemaCon 2020**, originally set for April 26–29 in Las Vegas; the **International Planetarium Society's** 2020 conference, set for June 21–25 in Edmonton, AB, Canada, which was to include a Giant Screen Day and be contiguous with the **IMERSA** Summit, has been canceled; and the **Themed Entertainment Association's** Summit and Award Gala, originally planned for April 16–18 in Ana-

(see **COVID** on page 6)



A portion of the videos the Arizona Science Center has posted to YouTube since closing in March.



Oceanic Research Group's Ancient Caves opened in March, just as theaters were closing.

(from **COVID** on page 5)

heim, CA, has been postponed to July 9–11. The TEA/SATE Europe conference has been rescheduled from May 2020 to May 2021 in Barcelona, Spain, with exact dates to be announced.

The **Giant Screen Cinema Association** has responded to the crisis with a new forum at its Web site that allows members to discuss their professional and personal reactions to the pandemic. The association is also hosting periodic online video meetings that have drawn as many as 80 GS professionals to talk about the situation. Visit giantscreencinema.com to access both.

In a statement, executive director **Tammy Seldon** said, "We understand that many GSCA members' travel budgets may be reduced or eliminated completely, and that some may be reluctant to travel in September. We are in discussions with the hotel to determine options for the GSCA 2020 conference, currently scheduled for September 21–24. We are exploring all options, including a smaller in-person event, a virtual event, or a hybrid. You will receive a survey soon to help us in our planning, and the Event Planning Committee and Board will provide updates when possible. We hope to have a final decision in early June."

Films in production

Among the few projects still actively shooting (or trying to) is *Secrets of the Sea* from **Oceanic Research Group** and **Howard Hall Productions**. Director **Jonathan Bird** (based in Massachusetts) tells *LFX*, "We had to cancel a planned shoot in the Bahamas in April that will be rescheduled. I was planning mostly local filming (New England and Eastern Canada) for the spring and summer, so that will go on as scheduled. **Howard** and **Michele Hall** will continue with some west coast filming that they were planning, once the lockdown comes to an end. We expect that coronavirus will not delay the [spring 2021] release of the film. However it may be that we hold back release, depending on how things look in the market."

Bird's latest film, *Ancient Caves*, nominally opened on March 7, but obviously had very few screenings before theaters began shutting down.

The **Stephen Low Company's Pietro Serapiglia** says that *Train Time*, originally set to open this month, is complete, except for the IMAX digital and film versions, which can't be finished until **IMAX Post** and **FotoKem**, the lab that produces the films prints, reopen for business. Serapiglia doesn't expect to be able to release the film this year.

GS film release dates

Four GS films have nominally been released since Jan. 1, 2020:

Dinosaurs of Antarctica (2/14)Giant Screen Films
Into America's Wild (2/14)MacGillivray Freeman
Sea Lions: Life by a Whisker (2/15).....K2 Studios
Ancient Caves (3/7) MacGillivray Freeman Films

However, they had only opened on a handful of screens by the time theaters began closing in mid-March. Their producers and distributors hope they will retain the bookings when theaters reopen, but the whole question of how and when theaters should re-launch remains an open question. (*See Diane Carlson's article at right.*)

Most of the original GS films currently in production have completed principal photography and are in post-production. These include:

America's ArcticTerra Mater
Angkor: Lost Empire of Cambodia....Definition Films
Asteroid HuntersImax Corporation
IrelandMacGillivray Freeman Films
Journey to the Great Mayan Reef..Milbrand Cinema
SnowSaint Thomas Productions
Tiger, Tiger.....White Mountain Films
Train TimeStephen Low Company

Although some post facilities are closed, and some types of work can't be done during the lockdown, other work is proceeding, although generally at a slower pace because of the uncertainty surrounding the reopening of theaters.

No producer has given us a firm release date for any film that was originally expected to open in 2020. As mentioned above, some are still hoping to hold onto 2021 dates, but admit they will have to be flexible and respond to the situation as it develops.

Hollywood releases

Although Hollywood has scrambled to reschedule some of its biggest films, some summer blockbusters are still set (as of press time) to open on their original dates. Several of the DMR films that only appeared briefly in theaters before the shutdown are now available for streaming at premium prices (e.g., for a \$20 rental instead of the usual \$4–6 six months after the theatrical run), including *Onward*,

Diane Carlson on Preparing to Reopen

by Diane Carlson

Looking forward to when cultural institutions will reopen, how can our GS industry prepare? First and foremost, and although it may be a cliché, it is true of our small industry that *we are all in this together*. And the best way to move forward is *together*, pooling ideas and planning strategically and tactically.

While some of our members, both private and institutional, may not survive the economic upheaval, we can all work together to return as strong as possible. I see it like launching a three-stage rocket.

In the first stage, don't let them forget you! Theaters must keep in touch with and support their audiences, including current members and pass holders as well as past individual ticket buyers. Supply them with information about our films, identifying those GS titles that are now available online, and providing links to educational materials and film-related trivia. Remind them of the entertainment and educational value of our programs.

If you have photos of film talent at your facility for one of the films that is now available online, personalize your outreach message with a photo of the talent at your location, or perhaps a local interview. You have brought creative, engaging, and beautiful programming to your community: don't let them forget this. And even if a film is not available online, its education materials are. Many of these materials were written for broader audiences than formal classroom teachers; parents can easily use them. I know this first-hand, because in the cases of the guides for *Pandas* and *Superpower Dogs*, I helped create them!

For stage two of our rocket launch, we

need to inform and excite our audiences about our reopening films. Educational materials, behind-the-scenes stories, and photos and bites of information taken from production notes are all great tools. Get them interested in the topic and film before you reopen. Make up trivia contest questions based on information from the film that families can quiz each other about. Build excitement so that they will want to return to your theater.

Stage three is planning the launch of your return to operation. How will you



Diane Carlson

inform your public that you are a safe place to visit again? A place to spark creativity and excitement? What kind of celebration will you plan? What is the plan after the opening week?

It will probably take at least three to six months after reopening before any kind of normality returns. There will be a pent-up desire to go out, but there will be caution. Research from **IMPACTS Research and Development's** Colleen Dilenschneider (colleendilen.com) has shown that "high-

touch" places and enclosed theater and performance halls will have a more challenging time upon reopening than open-air facilities like zoos.

Insist that your 3D glasses cleaning machine supplier certify that the unit sanitizes the glasses. Or consider opening with 2D screenings only. Make hand sanitizer readily available. Reduce the theater capacity in your ticketing system to allow guests to spread out.

Assure potential guests that you are meeting or exceeding all of the guidelines for safe operation. For example, start planning for routine temperature checks of your staff before they enter the facility. Review every area of the operation that could be a source of guest concern, starting with your admission procedures. Think creatively about ticketing options; for example, institute a multi-day day pass so that guests can make shorter visits, or leave if they feel it is getting too crowded, knowing that they can return without penalty. Many families will be hard hit financially, so creative thinking about new ticketing options will be important.

This is also a great time to rally staff across the organization to come together to support the theater effort and for theater staffers to show how they can support the mission of the organization and other units. Don't miss this opportunity to work creatively as a united institution to reengage with audiences.

Diane Carlson is principal of Giant Screen Cinema Consulting. Before founding the firm in 2017, she managed the IMAX theaters at the Pacific Science Center in Seattle, WA, for over 35 years. She can be reached at dianecarlson@scc@gmail.com.

Bloodshot, I Still Believe, and *A Quiet Place Part II*.

Titles moved from their original spring or summer release dates include *Mulan*, which has moved from March 27 to July 24; the next James Bond film, *No Time to Die* (from April 10 to Nov. 25); *Black Widow* (from May 1 to Nov. 6); *Fast &*

Furious 9 (from May 22 to April 2, 2021, the date originally set for *F&F 10*); and *Top Gun: Maverick* (from June 26 to Dec. 23).

However, some July and later release dates are mostly unchanged, as of this writing. Most notably, Christopher Nolan's *Tenet* is still scheduled for July

17, even though its planned release in up to 40 IMAX film theaters will require several months of preparation to return a dozen or more dormant multiplex 15/70 projectors to working condition, hire and schedule projectionist crews for each location, and order and produce prints.

(see **COVID** on page 10)



* New listing.

All films are 3D unless noted; underlined titles are 2D.

Updated information is printed in **bold**.

Unless noted, all films run about 40 minutes.

Tenet

Synopsis: distributor: Warner Bros.; director, writer: Christopher Nolan; producers: Christopher Nolan, Emma Thomas; DP: Hoyte Van Hoytema; score: Ludwig Göransson; executive producer: Thomas Hayslip. Cast: John David Washington, Michael Caine, Kenneth Branagh, Robert Pattinson. **2D. Release: July 17.**

Astronaut! Ocean to Orbit *

Examines how NASA trains astronauts underwater for work in space.

Oceanic Research Group; distributor: MacGillivray Freeman Films; director: Jonathan Bird; producer: Art Cohen; DP: Jonathan Bird; script: Jonathan Bird, Art Cohen; score: Bruce Zimmerman; executive producers: Christine Bird, Greg Von Hausch. Cast: Astronauts Chris Cassidy, Jeanette Epps. **Running time: 20 minutes. Release: September 2020.**

- Principal photography is 95% complete.
- May-June: Finish principal photography.
- Entirely shot for dome compatibility.

Angkor: Lost Empire of Cambodia (wt)

Definition Films, Helio Projects Asia; distributor: K2 Studios; director: Murray Pope; producers: Christopher Zaryc, David Gross, Murray Pope; DP: Earle Dresner; script: Murray Pope, Paul Phelan; executive producers: Ed Capelle, Mark Kresser, Nick Robinson, Kulikar Sotho, John Weiley. **Release: 2020.**

- Principal photography is complete, post-production is under way.

America's Arctic

Terra Mater Factual Studios; distributor: Cosmic Picture Distribution; directors: Myles Connolly, Florian Schulz; producers: Wolfgang Knöpfler, Walter Köhler; DP: Florian Schulz; script: Myles Connolly, Florian Schulz; score: Alex Heffes. **Release: 2020.**

- Filmed in the Arctic National Wildlife Refuge from 2014-2019.



- Principal photography is complete, post-production is under way.

Antarctica: Into the Unknown

BBC Studios Natural History Unit; distributor: SK Films; director: Fredi Devas; producers: Jonny Keeling, Myles Connolly; script: Fredi Devas, Jonny Keeling; score: Jacob Shea; executive producer: Jonathan Williams. **Release: 2020.**

Artemis: Beginning of a New Era (wt)

Afterglow Studios; distributor: tba; director: Luke Ployhar, producers: Luke Ployhar, Ashley Jahnke; script: Scott Pearson. **Release: 2020.**

Asteroid Hunters (formerly Asteroid Impact)

Imax Corporation, Huahuang Pictures; distributor: Imax Corporation; director: W.D. Hogan; producers: Jini Durr, Phil Groves; DP: Sean MacLeod Phillips; script: Phil Groves; executive producers: Anna Chi, Phil Groves. Cast: Marina Brozovic, Mark B. Boslough, Kelly Fast, Nahum Melamed. **Release: 2020.**

- Principal photography is complete, post-production is under way.

Dino Dana: The Movie

Sinking Ship Entertainment; distributor: Sinking Ship Entertainment; director: J.J. Johnson; producers: Eric Beldowski, Blair Powers, Christin Simms, Matthew J.R. Bishop; DP: George Lajtai CSC; script: J.J. Johnson, Christin Simms; score: Michael-Paul Ella. Executive producers: J.J. Johnson, Blair Powers, Christin Simms, Matthew J.R. Bishop. Cast: Michaela Luci, Saara Chaudry, Nicola Correia-Damude, Amish Patel. **2D. 30 minutes. Release: 2020.**

- A shorter version is being prepared.

Mars 1001

Mirage 3D; distributor: K2 Studios; director, writer: Robin Sip; DP: Christiaan Wouda; score: Mark Slater. Cast: Miles O'Brien. **Release: 2020.**

Ocean Currents (wt)

Wild Pacific Media, Definition Films; distributor: K2 Studios; director: Nick Robinson; producers: Nick Robinson, Electra Manikakis, Peta Ayers; DP: Nick Robinson, Jonathan Shaw ACS, Caspar Mazzotti; script: Nick Robinson, Peta Ayers; score: Hylton Mowday; executive producers: David Gross, Electra Manikakis, Nick Robinson. Cast: Silvia Earl. **Release: 2020.**

Snow (wt)

Saint Thomas Productions, nWave Pictures; distributor: nWave Pictures Distribution; directors: Jacqueline Farmer, Cyril Barbançon; producers: Jacqueline Farmer, Cyril Barbançon, Eric Dillens; DP: Cyril Barbançon; script: Jacqueline Farmer, Cyril Barbançon, Philippe Chappuis, Andy Byatt; executive producers: Jacqueline Farmer, Cyril Barbançon, Eric Dillens. **Release: 2020.**

- Principal photography is complete, post-production is under way.

Tiger, Tiger

White Mountain Films, Kennedy/Marshall Company, Imax Corporation; distributor: Imax Corporation; director: George Butler; producers: George Butler, Keero Birla, Caroline Alexander; DPs: Reed Smoot, Tom Hurwitz; script: Caroline Alexander; score: Mark Kilian; executive producers: Julian Robertson, Frank Marshall. Cast: Dr. Alan Rabinowitz. **2D. Release: 2020.**

- Principal photography is complete, post-production is under way.

Train Time

Stephen Low Company; distributor: Stephen Low Company; director, script: Stephen Low; producers: Pietro Serapiglia, Stephen Low; executive producer: Paul Globus. **2D. Release: 2020.**

- Film is complete.

Everest: Director's Cut *

A newly updated version of the 1998 blockbuster. *MacGillivray Freeman Films;* distributor: MacGillivray Freeman Films; directors: Greg MacGillivray, David Breashears, Steve Judson; producers: Steve Judson, Alec Lorimore, Greg MacGillivray, DP: David Breashears; script: Tim Cahill, Steve Judson; score: Daniel May, Steve Wood. Narrator: Liam Neeson. Cast: Araceli Segara, Jamling Tenzing Norgay, Ed Viesturs. **Release: February 2021.**

- The original 15/65 footage is being scanned at 16K resolution.
- New material will be added.
- The film will be released in 8K resolution.

Ireland

MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Greg MacGillivray; producer: Shaun MacGillivray. **Release: March 17, 2021.**

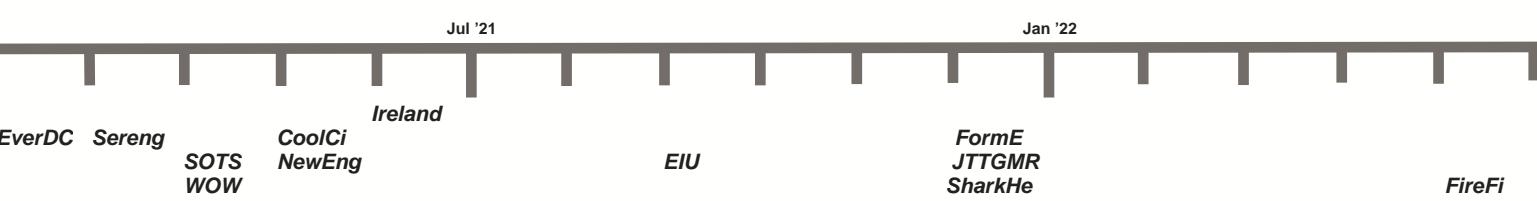
- Principal photography is complete, post-production is under way.

Serengeti

K2 Studios; distributor: K2 Studios; director: Michael Dalton-Smith; producers: Michael Dalton-Smith, David Gross; script: Michael Dalton-Smith, Karen Gordon; executive producers: David Gross, Mark Kresser, Michael Dalton-Smith. **Release: March 2021.**

Secrets of the Sea
Howard Hall Productions, Oceanic Research Group; distributor: tba; directors: Howard Hall, Jonathan Bird; producers: Michele Hall, Christine Bird; DPs: Howard Hall, Jonathan Bird; script: Howard Hall; score: Bruce Zimmerman, Alan Williams; executive producers: Michele Hall, Christine Bird. **Release: Spring 2021.**

- Shooting planned for the Bahamas this spring has been canceled.
- Shooting in New England and eastern Canada will proceed as planned.
- West coast shooting will resume when lockdown has ended.
- Release may be delayed to prevent competition with *Ancient Caves*.



Wings Over Water (formerly *Wings 3D*)
Dorsey Pictures, Archipelago Films; distributor: SK Films; directors, producers, script: Andrew Young, Susan Todd; DP: Andrew Young; executive producer: Chris Dorsey, Charlie S. Potter. Release: Spring 2021

- March: Filmed landscapes and great horned owl in North Dakota and Wisconsin.
- April: North Carolina, mallards, sand hill cranes.
- May: Bison ranchers in North Dakota (while maintaining social distancing).
- Summer: Aerials with birds, post work starts.

Cool Cities (wt)
K2 Studios; distributor: K2 Studios; director: Nick Robinson; producer: David Gross; executive producers: Robert Kresser, Mark Kresser, Mark Krenzien, David Gross. Cast: Tim Jarvis. Release: May 2021.

New England and the Sea of Stories (wt)
Cosmic Picture; distributor: Museum of Science, Boston; director: Daniel Ferguson; producer: Taran Davies; script: Daniel Ferguson; DP: Reed Smoot. 2D. Release: May 2021.

- Filming, originally planned to start in April, has been put on hold.

Einstein's Incredible Universe (wt)
Cosmic Picture; distributor: tba; director: Daniel

Ferguson; producers: Taran Davies, George Dufield, Daniel Ferguson; script: Daniel Ferguson, Mose Richards; DP: Reed Smoot. Release: Fall 2021.

Formula E: Racing to the Future
Producer/distributor: tba; director, DP: Peter Chang. Release: 2021.

Journey to the Great Mayan Reef
Milbrand Cinema; distributor: tba; director, producer, DP: Lance Milbrand; editor: Dave Choice; score: Icarus Music. Cast: Kathleen Dudzinski, Eldon Bolton. Release: 2021.

- Principal photography is complete, recording of narration track is in progress.

Shark Heroes (wt)
Definition Films; distributor: K2 Studios; director, writer: Amelia McCarten; producer: David Gross; DP: Jonathan Shaw ACS; executive producer: Mark Kresser. Release: 2021.

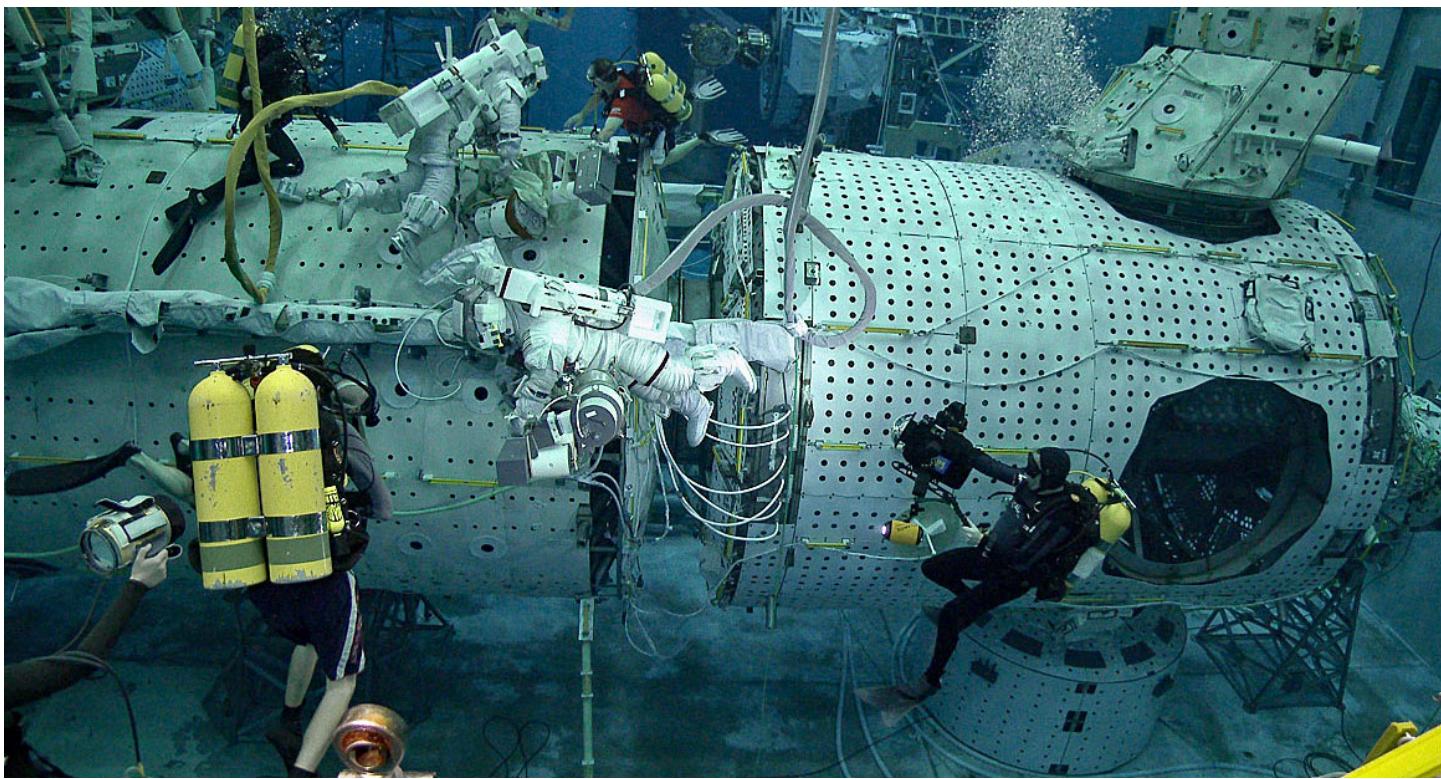
Fire Fighters
Sean Casey Productions; distributor: tba; director, DP: Sean Casey. 2D. Release: 2022.

- Shooting in Southern California began last fall and continued through January.
- Will be filming this fire season with the added pressure of the coronavirus affecting the fire

service community.

DMR FILMS:

Title	Dist	Release
Mulan	WDP	7/24/20
Wonder Woman 1984	WB	8/14/20
A Quiet Place Part II	PAR	9/4/20
The King's Man	FOX	9/18/20
Venom 2	Sony	10/2/20
Black Widow	WDP	11/6/20
No Time to Die	MGM	11/25/20
Dune	WB	12/18/20
Top Gun: Maverick	PAR	12/23/20
Beastie Boys Story	Poly	2020
Eternals	Sony	2/12/21
Fast & Furious 9	UP	4/2/21
Shang-Chi	WDP	5/7/21
Jurassic World 3	UP	6/11/21
The Batman	WB	6/25/21
Spider-Man (untitled)	WDP	7/16/21
Mission: Impossible 7	PAR	7/23/21
Doctor Strange	WDP	11/5/21
Avatar 2	FOX	12/17/21
Thor: Love and Thunder	WDP	2/18/22
Fast & Furious 10	UP	4/2/22
Indiana Jones (untitled)	WDP	7/29/22



Director Jonathan Bird (lower right) filming astronauts practicing a repair on the ISS external lab cameras in NASA's Neutral Buoyancy Lab in Houston for Astronaut! Ocean to Orbit.

(from **COVID** on page 7)

(Nolan's GS releases have averaged 146 minutes.) Sources tell *LFX* that those preparations have not yet begun. If they do not start in the next few weeks (or if the date is not moved), the 15/70 release might be limited to institutional theaters with staff projectionists and working 15/70 systems that would need no prep time. This would cut the number of screens roughly in half, and eliminate the most popular and lucrative locations in New York, Los Angeles, and San Francisco, dramatically reducing attendance and revenues from film screenings.

Entertainment reporter Scott Mendelson points out in an April 16 article at [Forbes.com](#) that "*Tenet*" would make for an ideal test case, presuming North America and/or the rest of the world is ready to try and get back into theaters. It's an extremely anticipated would-be blockbuster that was expected, before the current madness, to be one of the year's biggest domestic and global grossers."

But considering its \$200 million budget, and Nolan's passion for screening his movies on film, not only 15/70, but also 5/70 and 35mm, it would not be surprising if he and **Warner Bros.** ultimately opt to delay the release for several months.

Warner's *Wonder Woman 1984*, originally expected on June 5, was pushed back only two months, to Aug. 14. Like *Tenet*, it has "IMAX DNA," i.e., it was partly filmed with IMAX-certified digital cameras, so a run in IMAX theaters is essentially mandatory. Unlike *Tenet*, *Wonder Woman 1984* will not have a 15/70 release, so it could become the bellwether for the return to multiplexes if *Tenet* is postponed. Or it could be delayed once more, further scrambling the fall release schedule.

Two of the other big blockbusters were filmed with IMAX-certified digital cameras: **MGM's** *No Time To Die* and **Paramount's** *Top Gun: Maverick*, and their

rescheduling to November and December of this year respectively has stolen the thunder of other titles that might have looked for an IMAX release. They include Warner's *Godzilla vs. Kong*, which had already been moved from a March release to Thanksgiving week. *Top Gun's* move to Wednesday, Dec. 23, will probably limit the IMAX run of WB's *Dune*, which opens on the previous Friday.

tion." (At press time, the museum's Web site said it will reopen on May 1.)

Bob Perkins, president of **Destination Cinema, Inc.**, reports that with its seven theaters closed, "hourly staff has moved over to unemployment insurance and are waiting to come back to work. We expect to reopen by the summer season."

Berend Reijnoudt, director of **Omniversum**, an IMAX Dome theater in the Netherlands, says that most of his staff

has been laid off and is receiving unemployment benefits (which he explains "are not bad in the Netherlands") and will be rehired when the theater reopens. In the meantime, he is using the down time for "small maintenance," and having management meetings via MS Teams, Goto, and WhatsApp, which, he reports "really work well." He adds, "I see this as the only upside at the moment."

Producers, distributors, and other suppliers we have heard from are doing their best to continue despite the challenges and uncertainty. Greg MacGillivray tells *LFX*:

"We at MFF have six people working at our office, in separate rooms, and the other 24 people working at editing suites or offices at home. Because we have other projects besides those destined for giant-screen or IMAX theaters, we are currently able to keep everyone busy and happy. Every two days there is a production and post-production Zoom conference call, and every two weeks we are having a group Zoom video conference with all MFF staff. Because we're a tight-knit team, many of us having worked together for decades or more, the Zoom conferences are a real benefit and upper."

Don Kempf at Giant Screen Films and **Pietro Serapiglia** at the Stephen Low Company both say that although they are going in to their offices occasionally, the rest of their staffs are doing what work is needed from home. Neither expects to have to lay off employees. **Rick Gordon** of **RPG Pro**

(see **COVID** on page 12)



Time runs out for a July release of *Tenet* on 15/70 if preparation of dormant multiplex IMAX film projectors doesn't begin soon.

The effect on business

LFX has had confirmation from one U.S. museum director that hourly employees have been temporarily laid off, and has heard rumors of layoffs at other institutions. On the other hand, **Charlotte Brohi** writes that **Joel Bartsch**, president of the **Houston Museum of Natural Science**, "has stated he plans to pay all part-time and full time salaries for the dura-

Paul Fraser on the Post-COVID Future of the GS Business

LF Examiner asked a number of GS industry leaders for their opinions about what the future holds for our world, expecting only a few sentences from each. Most of those responses are included in the main article. Industry analyst and consultant **Paul Fraser** of **Blaze Cineworks** went far beyond with this thoughtful essay, which we are including in its entirety.

by Paul Fraser

Virtual reality consultant and *Forbes* columnist **Charlie Fink**, who was featured in a recent online video interview on the future of work, post-COVID-19, said something that I thought rang quite true. To paraphrase him, this COVID crisis is teaching us, as a society, that almost everything that should have changed pre-crisis has changed quickly, or is in the process of changing now: tele-medicine, online meetings, distance education, and so on.

We can apply this thinking to the GS industry. It puts even more emphasis on looking at new models for doing business, and may even lead to changes to our industry's main product: the giant-screen documentary.

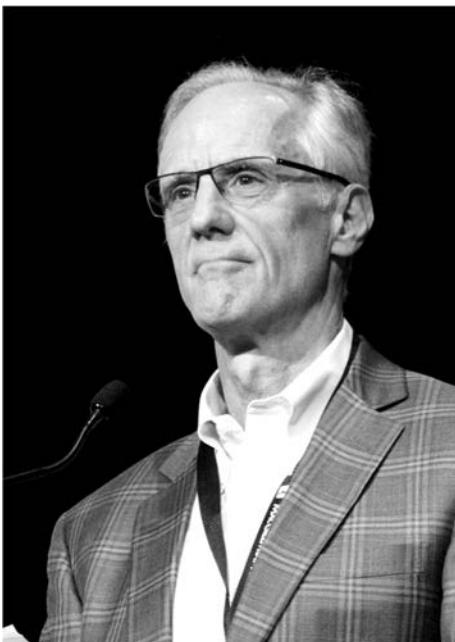
The future for all the stakeholders in the GS business will turn first on how theaters do over the next year or two. The vast majority are in museums or science centers, and admission to the theater is combined with building admission for about 90% of theater visits. So the survival of most GS theaters will depend at first on the ability of their host institutions to survive with zero revenues for a while, and probably, once they re-open, with much lower revenue than before the shutdown.

The next question (and big unknown) is how long it will take for people to visit theaters at the levels they did pre-shutdown. People may be quite willing to walk through large exhibit halls where social distancing is easier, but will they want to sit in a theater, in close proximity with a lot of strangers, before a vaccine is in full use? Theaters are considering making a number of building and operational

changes when they re-open, but will measures like only selling half of the theater's capacity help ease those concerns?

How many GS theaters and institutions have depended on out-of-state (or province) and out-of-country visitors for a good portion of their attendance? Travel, especially air travel, will likely take a while to bounce back.

For organized school groups, not only may educators be faced with pushback from concerned parents about their kids going to theaters, but schools and parents will be financially strapped and likely to cut back on their spending for school trips to GS theaters.



Paul Fraser

The ripple effect is that distribution revenues will be down for a while, too. For filmmakers, investing equity capital in GS films was already hard to justify on its economic merits, but with lower per-theater and overall license revenues, the appetite for any investor (or producer) to risk an equity investment may just vanish for good. This will put even greater pressure on raising "free" or "non-participating" funds from corporate sponsors, grant-making organizations, and government agencies, but these sources will

likely have less money to contribute and/or they will be deluged with funding requests. All this is likely to slow the pace of film development for the next couple of years, lead to lower production budgets, and reduce the number of new releases starting next year.

Bottom line, while we shouldn't discount the positive effect of pent-up demand, I think it will likely take until at least spring 2022 before we see a return to anything close to pre-shutdown levels of theater attendance. For some historic perspective, we could look at what happened to the GS industry after the financial market collapse in late 2008. GS theater attendance took a big hit, as did so much of the economy. In general, attendance levels eventually came back to a decent extent, but the new plateau fell well short of pre-2008 attendance levels. I believe there were other forces that held GS theaters back from completing a full rebound, so the worry now has to be that the recovery from the COVID shock may never get us back to our 2019 levels. It's difficult for any of us to forecast what the new normal will look like (though it's an quantitative exercise I may tackle), but as in the post-2008 period, there are other headwinds and changes in the broader entertainment landscape that museums and their theaters will have to navigate.

As the saying goes, "never let a crisis go to waste." My own glass-is-half-full view is that the GS industry is presented with an opportunity to re-invent itself. It's time to invent new ways to do business, new ways to engage visitors, new creative approaches to the GS film, and new channels of distribution and partnerships. I've had a number of stimulating conversations with various people in recent weeks. Weirdly, amidst the gloom we're facing today, it's kind of an exciting time.

Paul Fraser is president of Blaze Cineworks LLC, an independent consulting and project management firm that serves clients in a wide array of out-of-home immersive media experiences. www.BlazeCineworks.com



The Houston Museum of Natural Science in Texas is set to reopen on May 1.

(from COVID on page 10)

ductions gave a similar report.

Several organizations told *LFX* that they were applying for loans under the Paycheck Protection Program of the \$2 trillion economic stimulus bill that would cover two months' worth of salaries and certain other expenses, and would in most cases not need to be repaid.

What the future holds

In the current circumstances, the only certainty about the future is that it is nearly impossible to predict. Everyone hopes for a quick return to normality and business as usual, but previous epidemics and pandemics teach that ending quarantines too early rarely works out well: a second wave of contagion often flares up after the first wave drops off.

The best case scenario is a vaccine against the virus, and many candidates are currently being tested, but there is no guarantee that one will be discovered. Treatment for the symptoms of AIDS has become very effective over the past 40 years, but no vaccine has been developed to prevent the HIV virus from infecting people. WHO says that the soonest a COVID vaccine could become available is about 18 months, but concerns about being in large crowds could linger in a significant portion of the public long after that.

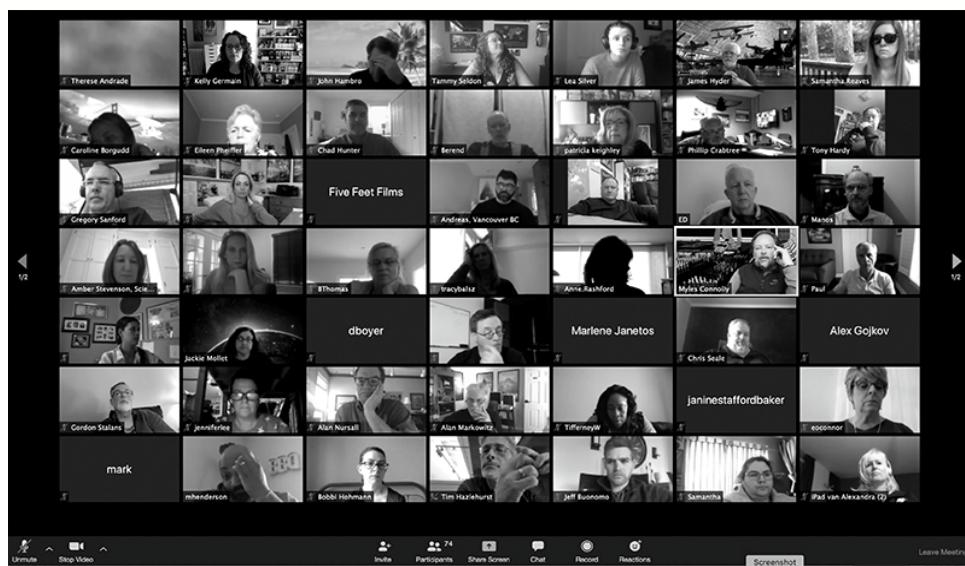
However, most GS industry people we

spoke to were hopeful that our community would pull through. Much of the discussion in the GSCA's online meetings has been about strategies for reopening theaters, such as initially selling a reduced number of seats to allow visitors to maintain adequate social distancing. In his letter to *LFX* (see page 2) director Jonathan Bird points out that 20-minute versions of GS films may become much more popular, because the more frequent turnaround times can partly compensate for lower per-show capacities.

GS veteran and consultant **Paul Fraser** of **Blaze Cineworks** provides a thoughtful look forward in the box on page 11.

MacGillivray says, "We want to make certain that everyone in our industry keeps healthy and happy during this trying time. Stay sequestered, and like previous downturns, have confidence that because we offer the highest quality entertainment in our films and at our theaters, and provide a unique source of inspiration and information to our customers, we will survive."

RPG's Gordon agrees. "I think we'll recover. I'm hopeful that theaters, producers, distributors, and other types of companies (like ours) will plunge back in with renewed energy and a sense of the mission to which we are all dedicated."



The GSCA's online meet-ups have been drawing as many as 80 participants.

(from GSCA on page 3)

sentatives of the GSCA. He introduced presenters **Demetri Portelli** and **Ben Gervais**, stereographer and technical supervisor, respectively, for *Billy Lynn's Long Halftime Walk* (2016) and last year's *Gemini Man*, the two films Lee has shot in 4K 3D at 120 fps. In those roles, they were largely responsible for developing, testing, and integrating the various camera, storage, post-production, server, and projection technologies needed to capture and present footage in the format that Lee has called "the whole shebang."

Portelli and Gervais started by project-

ing several action scenes from *Gemini Man* on the theater's 50-foot (15-meter) screen, then described the process of developing the system and overcoming the technical obstacles that arose in the process. (For more about that, see LF Examiner's interviews with Lee and Gervais, March 2020.) Following their presentation, they took questions from the audience.

The GSCA's annual conference and trade show was scheduled for Sept. 21-24 in Chicago, IL, but the association is considering alternatives in light of the coronavirus, and will decide how to proceed in

early June.

The following people helped make the Film Expo possible.

GSCA Staff: Tammy Seldon, Kelly Germain, Eileen Pheiffer.

Volunteers: Jenn Borcherding, John Borcherding, Tim Barrett, Araceli Ripper, David Ripper, Cherie Rivers, Alvis Wales, Kat Wild.

AMC staff: Keith Jones, Heidi Gilles, Brandon Grainger, Chris Keeth, Dani Mendez, Guillermo Quintanilla, Leslie Alvarado, Monica Guzman, Tiffany Payne.

Imax Corporation: David Keighley, Patricia Keighley, John Engracia, Gus Villasenor, Sarah Moshe, Alex Portin, Meetal Gokul, Karl Smith, Chris Thomas, Daniel Dieu, Jeff Dunant, Carlos Zambrano, Lynette Hartouni, Bryan Barcina, Tigran Kazaryan, Michael Lengyel, Tony McQueen, Chris Quengua, Aaron Cheslak, Adrian Govind, Arthur Ceniceros, Derek deBruyn, Gerald Sarinas, Jason Flowers, Manuel Ileto, Travis Ruiz, Wilver Delacruz.



L to r: Christie's Larry Paul, stereographer Demetri Portelli, and technical supervisor Ben Gervais discussed high frame rate in the Innovations Session.

(from BIZ on page 16)

In Memoriam: Armand Benatar

Armand Benatar, general manager of **La Géode** in Paris from 1987 to 1992, died on March 28 of COVID-19. He was 84.

Born in Casablanca, Morocco, in 1936, he graduated from the École des hautes études commerciales in Paris, and worked for French chemical company Rhône-Poulenc in Argentina before returning to Paris to head La Géode, the IMAX theater in an iconic steel sphere that had opened in 1985.

According to **Christine Eche**, who served in several positions at La Géode,



Armand Benatar

Benatar was "was entrepreneurial-minded, very smart, enthusiastic, and always caring about the people who worked for him. He always had new ideas, new projects, and he had a vision of what La Géode should be/become. As a manager he was respected, sometimes tough, but always fair. When you didn't agree with him, he would always listen to your arguments, and even

sometimes change his mind or make a compromise."

Eche credits Benatar with creating La Géode's Large Format Film Festival, and being instrumental in founding **Euromax**, the European giant-screen association, to help promote the making of GS films that would suit European tastes and sensibilities.

After leaving La Géode in 1992, Benatar served as a consultant to **Cuidad de las Artes y las Ciencias** in Valencia, Spain, and its distinctive IMAX Dome theater, **Hemiseric**.

Directory of Organizations Mentioned in this Issue of LF Examiner

Distributors' abbreviations are listed in **bold**.

<p>3D Entertainment Distribution Ltd. 3DED Ibex House 61-65 Baker Street Weybridge, Surrey KT13 8AH UK Tel: +44 20-7681-2357 Fax: +44 20-7681-2357 www.3DEfilms.com/</p>	<p>Ciudad De Las Artes Y De Las Ciencias, S.A. Avinguda del Professor López Piñero (Historiador de la Medicina), nº 7. Valencia, 46013 SPAIN Tel: +34-6-352-5507 Fax: +34-6-352-6023</p>	<p>Giant Screen Films GSF 1421 Sherman Ave, Unit 101 Evanston, IL 60201 Tel: 847-475-9140 Fax: 847-475-9145 gsfilms.com/</p>	<p>K2 Studios K2 880 Apollo Street, Suite 239 El Segundo, CA 90245 Tel: 310-524-9100 Fax: 310-524-1540 www.k2communications.com/</p>
<p>Achtel Pty. Ltd. 913 Coles Bay Road Coles Bay, TAS 7215 AUSTRALIA 24x7.com.au/</p>	<p>Cosmic Picture 64 Oxford Gardens London, W10 5UN UK Tel: +44-20-7792 1699 www.cosmictpicture.com/</p>	<p>Goodrich Quality Theaters 4417 Broadmoor Ave. SE Grand Rapids, MI 49512 Tel: 800-473-3523 www.gqtmovies.com/</p>	<p>Legoland Discovery Center Bay Area 870 Great Mall Drive Milpitas, CA 95035 bayarea.legolanddiscoverycenter.com/</p>
<p>Afterglow Studios 527 Marquette Ave. Ste. 2500 Minneapolis, MN 55402 afterglowstudios.com/</p>	<p>Cosmic Picture Distribution CPD 108 Village Square, Suite 304 Somers, NY 10589 www.cosmictpicture.com/</p>	<p>Great Lakes Science Center 601 ErieSide Ave. Cleveland, OH 44114 Tel: 216-696-2844 Fax: 216-736-7905 greatscience.com/</p>	<p>MacGillivray Freeman Films, Inc. MFF PO Box 205 Laguna Beach, CA 92652 Tel: 949-494-1055 Fax: 949-494-2079 macgillivrayfreeman.com/</p>
<p>AMC Theatres 11500 Ash St. Leawood, KS 66211-7804 Tel: 816-221-4000 Fax: 816-480-4617 www.amctheatres.com/</p>	<p>Definition Films FSA #40, Fox Studios Australia 38 Driver Avenue Moore Park, NSW 2021 AUSTRALIA www.definitionfilms.com.au/</p>	<p>Destination Cinema, Inc. DCI 3544 Lincoln Avenue, Suite C Ogden, UT 84401 Tel: 801-392-2001 Fax: 801-392-6703 destinationcinema.com/</p>	<p>Hastings Museum 1330 North Burlington Avenue PO Box 1286 Hastings, NE 68902-1286 Tel: 402-461-2399 Fax: 402-461-2379 hastingsmuseum.org/</p>
<p>Archipelago Films 2 Jackson Street Pleasantville, NY 10570 Tel: 914-862-4202 www.archipelagofilms.com/</p>	<p>Dorsey Pictures 10397 W. Centennial Road Littleton, CO 80127 Tel: 720-891-4835 www.dorseypictures.tv/</p>	<p>Houston Museum of Natural Science 5555 Hermann Park Drive Houston, TX 77030-1799 Tel: 713-639-4600 Fax: 713-523-4125 www.hmn.org/</p>	<p>Masters Digital, Inc. 8867 Forest Park Dr Saanichton, BC V8L 5A7 CANADA Tel: 250-412-2629 mastersdigital.com/</p>
<p>Arizona Science Center 600 E. Washington St. Phoenix, AZ 85004 www.azscience.org/</p>	<p>BBC Studios Natural History Unit Television Centre, 101 Wood Lane London, W127FA UK www.bbcearth.com/</p>	<p>Emagine Entertainment 3221 W Big Beaver Rd Troy, MI 48084 www.emagine-entertainment.com/</p>	<p>Milbrand Cinema 24780 Highland Way Los Gatos, CA 92033 milbrandcinema.com/</p>
<p>BIG & Digital B&D 8565 S. Eastern Avenue, Suite 158 Las Vegas, NV 89123 Tel: 502-212-1559 www.biganddigital.com/</p>	<p>Eugenides Planetarium 387 Sygrou Avenue Paleo Falirio Athens, 17564 GREECE Tel: +30-1-941-1181 Fax: +30-1-943-171 www.eef.edu.gr/</p>	<p>Howard Hall Productions 2171 La Amatista Road Del Mar, CA 92014 Tel: 858-259-8898 Fax: 858-792-1467 www.howardhall.com/</p>	<p>Mirage 3D Lekstraat 156 The Hague, 2515VZ NETHERLANDS Tel: +31-7-345-7500 mirage3d.nl/</p>
<p>Blaze Cineworks LLC 10460 Roosevelt Blvd N., Ste.180 St. Petersburg, FL 33716 Tel: 203-292-5745 Fax: 203-404-4998 blazecineworks.com/</p>	<p>Fleet Science Center 1875 El Prado PO Box 33303 San Diego, CA 92101 Tel: 619-238-1233 Fax: 619-685-5771 www.rhfleet.org/</p>	<p>Imax Corporation 12582 West Millennium Drive Los Angeles, CA 90094 Tel: 310-255-5500 Fax: 310-255-5501 www.imax.com/</p>	<p>Museum of Science Boston 1 Science Park Boston, MA 02114 Tel: 617-589-0266 Fax: 617-589-0454 www.mos.org/</p>
<p>Boston Films 739 Vernon Ave Venice Beach, CA 90291 Tel: 310-795-9409 www.philipboston.com/</p>	<p>FotoKem Industries, Inc. 2801 W. Alameda Ave. Burbank, CA 91505-4582 Tel: 818-846-3101 Fax: 818-841-2130 www.fotokem.com/</p>	<p>Imax Corporation IMAX 2525 Speakman Drive Mississauga, ON L5K 1B1 CANADA Tel: 905-403-6500 Fax: 905-403-6450 www.imax.com/</p>	<p>National Air and Space Museum 6th & Independence Ave. SW Washington, DC 20560 Tel: 202-357-1675 Fax: 202-357-1652 airandspace.si.edu/</p>
<p>Christie Digital Systems USA, Inc. 10550 Camden Drive Cypress, CA 90630 Tel: 714-236-8610 Fax: 714-229-7128 www.christiedigital.com/</p>	<p>Foxfire Interactive Corporation FIC 500 East Washington St, Suite 30 North Attleboro, MA 02760 Tel: 508-699-6650 Fax: 508-699-6651 www.foxfireinteractive.com/</p>	<p>IMAX Victoria in the Royal BC Museum 675 Belleville Street Victoria, BC V8W 1A1 CANADA Tel: 250-953-4629 Fax: 250-480-4830 imaxvictoria.com/</p>	<p>National Film Board of Canada 3155 Cote de Liesse Road Saint Laurent, QC H4N 2N4 CANADA Tel: 514-283-9441 Fax: 514-496-1895 www.nfb.ca/</p>
<p>Cincinnati Museum Center 1301 Western Ave Cincinnati, OH 45203 Tel: 513-287-7014 Fax: 513-287-7079 www.cincymuseum.org/</p>	<p>Giant Screen Cinema Association 624 Holly Springs Road Suite 243 Holly Springs, NC 27540 Tel: 919-346-1123 www.giantscreencinema.com/</p>	<p>IMERSA www.imersa.org/</p>	<p>National Museum of Marine Science & Technology 61, Lane 369, Beining Road Keelung, 202 TAIWAN Tel: +886 2 2469 6000 www.mmmst.gov.tw/chhtml/index.aspx</p>
<p>Cinemark Holdings, Inc. 3900 Dallas Parkway South, Suite 500 Plano, TX 75093 Tel: 972-665-1000 www.cinemark.com/theatre-search/</p>	<p>Impacts Research and Development www.impacts-iq.com/</p>	<p>International Planetarium Society Marietta College 215 Fifth Street Marietta, OH 45750 Tel: 252-328-9365 Fax: 252-328-9371 www.ips-planetarium.org/default.aspx</p>	<p>National Planetarium Ministry of Science, Tech, & Envir. 53, Jalan Perdana Kuala Lumpur, 50480 MALAYSIA Tel: +60-3-2735484 Fax: +60-3-2735488 www.planetariumnegara.gov.my/</p>

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THE BIZ



The sensor of the Achtel 9x7 camera.

Achitel finishing 9K camera

Filmmaker and engineer **Pawel Achtel** of **Achtel Pty. Ltd.** in Australia tells *LF Examiner* that he has nearly finished work on his Achtel 9x7 digital cinema camera. He writes, "At over 65 megapixels and with a 4x3 native aspect ratio, the camera has approximately twice the resolution of RED Monstro and approximately 20 times the recording speed. Featuring a state-of-the-art, backside-illuminated sensor, it offers high sensitivity, low noise, and wide gamut, and supports frame rates up to 70 fps. The camera records to internal 8TB memory at speeds up to 8GB/s (64Gb/s) of uncompressed RAW footage."

The camera weighs in at 5 pounds (2.3 kilos) without lens, battery, or accessories, and has a 0.86x1.18-inch (22x30mm) sensor with a native resolution of 7000x9300 pixels. The camera head measures 2.75x3.07x1.57 inches (70x78x40mm), and the recorder is 1.96x6.30x7.09 inches (50x160x180mm), excluding lens, battery, and accessories.

Achtel adds, "The camera is a reality: I shot first motion pictures from it this week and I expect it will be ready for prime time by the end of May 2020. This is what happens when I'm forced [by coronavirus measures] to stay out of water for any significant amount of time."

Goodrich files for Chapter 11

In late February, Michigan-based **Goodrich Quality Theaters**, which oper-

ates five IMAX theaters, filed for Chapter 11 bankruptcy protection, just weeks before the coronavirus pandemic closed virtually all movie theaters.

The company reportedly owes more than \$30 million to three banks. In addition, court records show that its 20 largest unsecured creditors are owed a total of \$3 million, including concessions supplier Vistar Corporations, four studios, **Christie Digital**, Pepsi-Cola, and **Imax Corporation**, which is owed \$87,244.

The chain's 14 locations remained open until mid-March, while owner **Robert Goodrich** was looking for a buyer. Goodrich told local media outlets, "I didn't have a clear crystal ball. I spent a lot of money putting recliners in some theaters and upgrading theaters, and then the industry turned negative." The chain's fifth IMAX screen opened in an updated multiplex in Lafayette, IN, in spring 2019.

The company is reportedly in talks with Michigan-based **Emagine Entertainment** to acquire a portion of Goodrich's locations. Emagine operates 21 locations with 208 screens in four mid-west states.

Duncan leaves Tech for Legoland

Michelle Duncan, IMAX theater experiences director at the **Tech Interactive** in San Jose, CA, left that position in late March to become the operations manager for a new Legoland Discovery Center that was set to open in Milpitas, CA, in April. (The opening has been postponed indefinitely because of the coronavirus outbreak.)

Duncan was with the Tech for 14 years, starting as theater operations manager in November 2005. She supervised the programming and operation of the 295-seat

IMAX Dome theater with a 15/70 GT film projector, in late 2018 overseeing its conversion to one of the first IMAX laser dome projection systems.

She tells *LFX* that "I'll continue to serve on the GSCA board through the end of my term and remain active on my committees. The success and growth of our industry is important to me, especially as we head into the trying times ahead."

Imax names two new execs

Imax Corporation has appointed a new chief technology officer and a new senior vice president for investor relations.

New CTO **Pablo Calamera** comes to Imax from JW Player, a "network independent platform for video delivery and intelligence," according to the company's Web site. In a 30-year career that includes stints with Apple, Microsoft, and WebTV, Calamera has also served as CTO at Vonage, ClearChannel, and ThumbPlay, a cloud-based music company.

Calamera replaces **Brian Bonnick**, who is retiring after 20 years in the position, during which time he oversaw the company's transition to digital and laser projection, among other accomplishments. In a release, CEO **Richard Gelfond** praised Bonnick as "a driving force behind the technology that lifted Imax beyond museums and into multiplexes around the world, establishing the company as a global entertainment powerhouse."

Brett Harriss is Imax's new SVP of investor relations, coming to the company from GAMCO Investors, where he was director of research and portfolio manager for the firm's \$100-million technology and media-focused mutual fund.



Pablo Calamera



Michelle Duncan



Brett Harriss

(see *BIZ* on page 13)